Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-32. (cancelled)

33. (currently amended) A system for color mapping , the system comprising:

a source device capable of producing an image from image data using a source device profile;

a destination device capable of reproducing said image from the image data using a destination device profile; and

a computer system operatively connecting said source device and destination device, said computer system including:

a source device profile interpreter that interprets the source device profile to convert coordinates in a source device color space to a device-independent color space;

a destination device profile interpreter that interprets the destination device profile to convert coordinates in a destination device color space to the device-independent color space; and

a color transformer that generates a color map defining a relationship between the source and destination device color spaces based on the converted coordinates and user preferences, said user preferences being specified by a user to configure the color transformer, ~~wherein the user preferences include color conversion preferences~~,

wherein the color transformer generates the color map in part by reducing color error between said converted coordinates from the source and destination device profile interpreters, the color transformer, in said reducing, at least adjusting coordinates in the destination device color space to generate adjusted coordinates, the color map being based in part on said adjusted coordinates in the destination device color space, and

wherein the source and destination device profile interpreters use forward transformation profiles to produce said converted coordinates.

34. (currently amended) A system for color mapping , the system comprising:

a source device capable of producing an image from image data using a source device profile;

a destination device capable of reproducing said image from the image data using a destination device profile; and

a computer system operatively connecting said source device and destination device, said computer system including:

a source device profile interpreter that interprets the source device profile to convert coordinates in a source device color space to a device-independent color space;

a destination device profile interpreter that interprets the destination device profile to convert coordinates in a destination device color space to the device-independent color space; and

a color transformer that generates a color map defining a relationship between the source and destination device color spaces based on the converted coordinates and user preferences specified by a user independently of the source and destination device profiles, ~~wherein the user preferences include color conversion preferences,~~ wherein the source device profile characterizes a source device and contains raw spectral data used to construct said source device profile, and the destination device profile characterizes a destination device and contains raw spectral data used to construct said destination device profile.

35. (currently amended) A system for color mapping , the system comprising:

a source device capable of producing an image from image data using a source device profile;

a destination device capable of reproducing said image from the image data using a destination device profile; and

a computer system operatively connecting said source device and destination device, said computer system including:

a source device profile interpreter that interprets the source device profile to convert coordinates in a source device color space to a device-independent color space;

a destination device profile interpreter that interprets the destination device profile to convert coordinates in a destination device color space to the device-independent color space; and

a color transformer that generates a color map defining a relationship between the source and destination device color spaces based on the converted coordinates and user preferences, said user preferences being specified by a user independently of the source and destination device profiles;

~~wherein the user preferences include color conversion preferences;~~

wherein the source device profile defines a forward transformation from the source device color space to the device-independent color space; and

wherein the destination device profile defines a forward transformation from the destination device color space to the device-independent color space.

36. (previously presetned) The system of claim 33, wherein the color map is a look-up table.

37. (previously presented) The system of claim 33, wherein the color map is a mathematical expression.

38-46. (cancelled)

47. (currently amended) A system for color mapping, the system comprising:

a source device capable of producing an image from image data using a source device profile;

a destination device capable of reproducing said image from the image data using a destination device profile; and

a computer system operatively connecting said source device and destination device, said computer system being programmed to include:

means for interpreting a the source device profile to convert coordinates in a source device color space to a device-independent color space;

means for interpreting a the destination device profile to convert coordinates in a destination device color space to the device-independent color space; and

means for generating a color map defining a relationship between the source and destination device color spaces based on the converted coordinates and user preferences specified by a user independently of the source and destination device profiles, ~~wherein the user preferences include color conversion preferences,~~

wherein the means for generating a color map generates the color map in part by reducing color error between said converted coordinates from the <u>means for interpreting the source device profile, and the means for interpreting the destination device profile</u> ~~source and destination device profile interpreters~~, said reducing at least adjusting coordinates in the destination device color space, the color map being based in part on said adjusted coordinates in the destination device color space; and

wherein the means for interpreting the source device profile, and the means for interpreting the <u>source device profile, and the means for interpreting the</u> destination device profiles <u>each</u> use forward transformation profiles to produce the converted coordinates.

48. (currently amended) The system of claim 47, wherein said <u>means for interpreting the source device profile, and the means for interpreting the destination device profile</u> ~~source and destination device profile interpreters~~ are configured to include illuminant functions.

49. (currently amended) The system of claim 47, wherein said <u>means for interpreting the source device profile, and the means for interpreting the destination device profile</u> ~~source and destination device profile interpreters~~ are configured to include observer functions.

50. (previously presented) The system of claim 47, wherein the means for generating a color map adjusts the means for interpreting the source and destination device profiles based on the user preferences.

51. (currently amended) A method implemented, at least in part, by one or more computers, the method comprising:

producing an image from image data using a source device profile; and

reproducing said image from the image data using a destination device profile;

wherein said reproducing further comprises:

interpreting the source device profile to convert coordinates in a source device color space to a device-independent color space;

interpreting the destination device profile to convert coordinates in a destination device color space to the device-independent color space;

generating a color map defining a relationship between the source and destination device color spaces based on the converted coordinates and user preferences specified by a user independently of the source and destination device profiles, wherein the user preferences include color conversion preferences; and

using the color map to map colors between an image produced by a source device having said source device profile and a reproduction of said image produced by a destination device having said destination device profile;

wherein generating a color map includes generating the color map in part by reducing color error between the converted coordinates generated from interpreting the source device profile and the converted coordinates generated from interpreting the from the source and destination device profile interpreters, said reducing at least adjusting coordinates in the destination device color space, the color map being based in part on said adjusted coordinates in the destination device color space; and

wherein interpreting the source and destination device profiles includes using forward transformation profiles to produce the converted coordinates.

52. (currently amended) The system of claim 51, wherein said interpreting the source device profile and said interpreting the destination device profile ~~source and destination device profile interpreters~~ are configured to include illuminant functions.

53. (currently amended) The system of claim 51, wherein aid ~~source and destination device profile interpreters~~ interpreting the source device profile and said interpreting the destination device profile are configured to include observer functions.

54-59. (cancelled)

60. (previously presented) The system of claim 33, wherein said source and destination device profile interpreters are configured to include illuminant functions.

61. (previously presented) The system of claim 33, wherein said source and destination device profile interpreters are configured to include observer functions.

62-63. (cancelled)

64. (previously presented) The system of claim 33, wherein the source and destination device profile interpreters are configured to include white- and black-point parameters to account for color variations between media and colorants used by different color display devices.

65-66. (cancelled)

67. (previously presented) The system of claim 35, wherein the source and destination device profile interpreters are configured to include white- and black-point parameters to account for color variations between media and colorants used by different color display devices.

68. (new) A method for converting CMYK source device values to CMYK destination device values, comprising:

converting CMYK values to a four color PCS using a source profile with a four color PCS;

converting the four color PCS to the CMYK destination values using a destination profile with the four color PCS; and

wherein three colors of the four color PCS are used to define the color of a combined CMYK values and the remaining PCS color is used to define the color of only a K colorant.

69. (new) A method for performing black point adjustment while performing color management conversions, comprising:

determining a device independent black reference vector for a device that corresponds to a predetermined set of device dependent values for that device;

converting the device dependent values to device independent data; and

adjusting the device independent data based on the previously determined black reference vector.

70. (new) A method for performing black point adjustment while performing color management conversions, comprising:

extracting black point information from at least one device profile; and

applying the black point information to a device independent color space in the course of converting image data from a source device color space to a destination device color space.

71. (new) A method for performing color conversion, comprising configuring a color transformer to perform black point scaling when converting image data from a source to a destination.

72. (new) A method of performing color conversion between profiles, comprising:

comparing two sets of measured and reference data for at least one device corresponding to one of the profiles used in the conversion;

wherein the data from the two sets of measured and reference data correspond to the same device values and are indicative of differences in behavior between a current state of the device and a reference state of the device in which at least one member of the set includes more than one non-zero value of colorants; and

performing one-dimensional corrections to one of the profiles in order to account for the differences between the measured and reference data sets prior to performing color conversion.

73. (new) A method of performing color conversion between profiles comprising converting source device values to destination device values using plug-in software modules to define intermediate PCS used for the conversion.

74. (new) A method for performing color conversion between profiles comprising converting source device values to destination device values using plug-in software modules to be used for calculating intermediate PCS values.

75. (new) A method for performing color conversion between profiles comprising converting source device values to destination device values using plug-in software modules to define gamut mapping techniques used for the conversion.